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Host Nation Coordination: Assuring Spectrum Supportability Outside the United States

By Thomas Kidd - April-June 2007

Obtaining foreign spectrum support for Marine Corps and Navy operations is referred to as "Host Nation Allocation" (HNA) or "Host Nation Coordination." Regardless of the term used, acquiring host nation spectrum supportability from foreign nations is critical to the training and operations of the Department of the Navy (DON), and it is a complex and lengthy process.

Earlier this year, the Joint Staff Director for Command, Control, Communications and Computer Systems (J-6) stated that 51 percent of new Department of Defense (DoD) systems procured in fiscal year 2006 use electromagnetic spectrum. Most DON weapons systems, communications systems, sensor systems, and intelligence systems use electromagnetic spectrum, including radio frequencies, infrared frequencies and more, in some manner.

Obtaining frequency assignments to operate within the United States and its possessions (US&P) is generally not a challenge because the majority of spectrum-dependent systems procured from U.S. sources conform to U.S. frequency allocation. However, obtaining spectrum supportability for operations outside the US&P is too often problematic.

There are two fundamental factors which must be understood when acquiring host nation spectrum support:

Sovereign Nation Spectrum Rights: The fundamental law of international spectrum is that each and every sovereign nation has the undisputed right to manage and use the electromagnetic spectrum within its borders as it deems appropriate.

Spectrum Allocations: The International Telecommunication Union (ITU) is the international organization within the United Nations that develops international regulations "to ensure rational, equitable, efficient and economical use of the radio-frequency spectrum." The ITU establishes global allocations of electromagnetic spectrum, or radio frequencies, that are intended to support specific types of services: mobile and fixed communications, maritime communications, radar and more, and minimizes harmful radio frequency interference.

ITU spectrum allocations are implemented in most countries throughout the world. Frequency allocations that support specific systems or capabilities within the United States often conflict with frequency allocations in other countries. If these conflicts are not resolved, the result could be radio frequency interference that degrades the capabilities of both host nation and DON systems.

To prevent interference, host nations regularly place restrictions on DON electromagnetic spectrum use within their country. Host nation restrictions, such as terminating radar operations when Navy ships enter host nation waters or limiting frequency-hopping capabilities, can degrade the capabilities of DON equipment.

Although the U.S. equipment certification process is usually not referred to as host nation spectrum supportability, the United States is, in fact, the host nation. Generally, the military services request certification of all spectrum-dependent systems when they are being acquired. The process requires the submission of equipment parameters, including transmitter power, bandwidth, and more, to the National Telecommunications and Information Administration (NTIA), which validates that the equipment operates within U.S. spectrum allocations and is supportable within the US&P. The equipment is then certified and frequency assignments can be obtained for operation within the US&P.

Obtaining host nation spectrum support outside the US&P is similar to the US&P process except that the geographic combatant command (COCOM) is responsible for coordinating host nation spectrum supportability. Again, the military services initiate the process by providing the technical parameters to one or more COCOMs, instead of the NTIA.

The COCOMs operate with the consent of the U.S. State Department and provide the parameters to the host nations. If U.S. equipment conforms to a host nation's spectrum allocations, it generally supports the request. However, sovereign rights and multiple services within a given ITU allocation

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often prevent naval equipment from receiving host nation coordination, despite the equipment being certified within the United States.

There is no guaranteed process to ensure all DON systems certified for use in the United States will receive carte blanche spectrum supportability abroad. However, by following these recommendations, the DON can greatly improve the likelihood that spectrum-dependent systems will be supported in host nations.

Organizations procuring spectrum-dependent systems should:

– Consider spectrum supportability up-front in the acquisition process and consider it as a Key Performance Parameter (KPP).

– Determine where the equipment will be used and conduct the appropriate research to understand the spectrum allocations of those countries.

– Solicit the expertise and assistance of the Joint Spectrum Center, go to http://www.jsc.mil, for more information.

Spectrum access throughout the world is critical to the naval services. Understanding the challenges and processes associated with host nation spectrum support enables organizations involved with the acquisition of spectrum-dependent devices and systems to implement necessary controls that ensure the Marine Corps and Navy remain the most capable military forces in the world.

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